Offshore Petroleum Regulator
for Environment & Decommissioning

RECORD OF THE HABITATS REGULATIONS ASSESSMENT UNDERTAKEN UNDER REGULATION 5 OF THE OFFSHORE PETROLEUM ACTIVITIES (CONSERVATION of HABITATS) REGULATIONS 2001 (As Amended).

Calder, Dalton and Millom Decommissioning

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TABLES

FIGURES

ABBREVIATIONS

Abbreviation	Description
%	Percentage
<	Less than
°	Degrees
AA	Appropriate Assessment
AEOSI	Adverse Effects on Integrity
AIS	Automatic Identification System
CCS	Carbon Capture and Storage
CPP1	Morecambe Central Processing Platform
Defra	Department for Environment, Food & Rural Affairs
DESNZ	Department for Energy Security and Net Zero
DP	Decommissioning Programmes
DPPA	Drilling and Processing Platform Alpha
EA	Environmental Appraisal
EC	European Commission
EIS	East Irish Sea
EU	European Union
HRA	Habitats Regulations Assessment
IROPI	Imperative Reasons of Overriding Public Interest
IUCN	International Union for Conservation of Nature
JNCC	Joint Nature Conservation Committee
km	Kilometre
km^2	Square kilometre
KP	Kilometre Point
LAT	Lowest Astronomical Tide
LSE	Likely Significant Effect
m	Metres
MCAA	Marine and Coastal Access Act
MLWM	Mean Low Water Mark
N	North
NE	Northeast
nm	Nautical mile
NSTA	North Sea Transition Authority
NUI	Normally Unmanned Installation
OPRED	Offshore Petroleum Regulator for Environment & Decommissioning

Abbreviation	Description
P&A	Plug & Abandonment
PETS	Portal Environmental Tracking System
PLEM	Pipeline End Manifold
pSAC	Possible Special Area of Conservation
RIAA	Report to Inform the Appropriate Assessment
ROV	Remotely Operated Vehicle
RSPB	Royal Society for the Protection of Birds
SAC	Special Area of Conservation
SD	Standard Deviation
SPA	Special Protection Area
SSC	Suspended Sediment Concentration
SSSI	Site of Specific Scientific Interest
UK	United Kingdom
UKCS	United Kingdom Continental Shelf
W	West
WHPS	Wellhead Protection Structure

1 INTRODUCTION

Council Directive 92/43/EC (European Commission) on the conservation of natural habitats and of wild fauna and flora (the Habitats Directive) and Council Directive 2009/147/EC on the conservation of wild birds (the Birds Directive) aim to ensure the long-term survival of certain habitats and species in Europe, by protecting them from the adverse effects of plans and projects.

The Habitats Directive aims to restore and maintain Europe's biodiversity by protecting habitats and species of European importance. It achieves this through the designation of protected sites known as Special Areas of Conservation (SACs). The goal is to ensure that these species and habitats are maintained or restored to a Favourable Conservation Status.

The Birds Directive aims to protect all naturally occurring wild bird species and their most important habitats, including rare, vulnerable, and migratory bird species. Along with the Habitats Directive, the Birds Directive also contributes to the designation of protected sites, known as Special Protection Areas (SPAs).

SPAs and SACs collectively form the United Kingdom (UK)'s national site network.

In the UK, a Habitats Regulations Assessment (HRA) is triggered for oil and gas activities (including decommissioning activities) based on specific legislation:

- The Offshore Petroleum Activities (Conservation of Habitats) Regulations 2001 (as amended); and
- The Conservation of Habitats and Species Regulations 2017 (known as the Habitats Regulations).

The Offshore Petroleum Activities (Conservation of Habitats) Regulations 2001 (as amended) transpose the Habitats and Birds Directives into UK law for oil and gas activities carried out wholly or partly in the UK continental shelf (including decommissioning activities). The regulations set down obligations for assessing the impact of offshore oil and gas activities (including decommissioning activities) on habitats and species protected under the Habitats Directive and Birds Directive.

The Conservation of Habitats and Species Regulations 2017 (known as the Habitats Regulations), which apply to broader marine activities (not just oil and gas), work alongside the Offshore Petroleum Activities (Conservation of Habitats) Regulations 2001 to protect European sites. These regulations serve as the governing legislation for implementing several other requirements contained in the Directives. Whilst the 2001 Regulations focuses on assessing impacts of oil and gas activities (including decommissioning activities), the Habitats Regulations provide a broader framework for conservation in offshore marine environments.

Since the departure of the UK from the European Union (EU), the Conservation of Habitats and Species Amendment (EU Exit) Regulations 2019 ensure that the requirements under the Habitats Regulations remain largely unchanged. In the UK, the Habitats Regulations created a new national site network that

replaced the EU's Natura 2000 ecological network. European sites, formerly Natura 2000 network, are now part of the UK's National Site Network. The term "European site" has been retained in accordance with guidance issued by the UK Government on the 2019 (EU Exit) Regulations (Department for Environment, Food and Rural Affairs (Defra), 2021).

The following European sites are protected by the Habitats Regulations and any proposals that could affect them will require a HRA:

- SACs, including possible SACs (pSAC), and
- SPAs, including potential SPAs.

Under the Habitats Regulations, all competent authorities must consider whether any plan or project could affect a European site before authorising or carrying it out. This includes assessing whether it will have a "Likely Significant Effect" (LSE) on a European site, either alone or in-combination with other plans or projects. If such an effect is anticipated, they must conduct an "Appropriate Assessment" (AA) to determine the implications for a site's integrity and conservation objectives. Such a plan or project may only be agreed after ascertaining that it will not adversely affect the integrity of a European Site unless there are imperative reasons of overriding public interest (IROPI) for carrying out the plan or project.

Regulation 5(1) of the 2001 Regulations provides that: *The Secretary of State shall, before granting any Petroleum Act licence, any consent, any authorisation, or any approval, where he considers that anything that might be done or any activity which might be carried on pursuant to such a licence, consent, authorisation or approval is likely to have a significant effect on a relevant site, whether individually or in-combination with any other plan or project, including but not limited to any other relevant project, make an appropriate assessment of the implications for the site in view of the site's conservation objectives.*

Harbour Energy (referred to as the 'Operator') have submitted an Environmental Appraisal (EA) documenting the assessment of environmental impacts of the proposed Calder, Dalton and Millom decommissioning activities (hereafter referred to as the 'Project') to the Offshore Petroleum Regulator for Environment and Decommissioning (OPRED) under the Marine and Coastal Access Act (MCAA) 2009.

In accordance with The Offshore Petroleum Activities (Conservation of Habitats) Regulations 2001 (as amended), the Conservation of Offshore Marine Habitats and Species Regulations 2017 (for offshore areas, 12 – 200 nm) and the Conservation of Habitats and Species Regulations 2017 (less than 12 nm) (together termed 'the Habitats Regulations'), the impacts of a project on the integrity of a UK site network site are assessed and evaluated as part of the HRA process.

This is a record of the HRA undertaken by the Secretary of State for The Department for Energy Security and Net Zero (DESNZ) in respect of the Project.

The Project is not directly connected with, or necessary to, the management of any National sites but it may affect them. The purpose of this HRA is to determine whether the Project will adversely affect the integrity of any UK National Site Network designated site.

The four stages of the HRA process are described in Defra guidance (Defra, 2023). The stages are summarised in the bullets below:

- Stage 1: HRA Screening - to check if the Project is likely to have a significant effect on the site's conservation objectives (Section 3);
- Stage 2: Appropriate Assessment (AA) carried out by the Competent Authority and informed by the Report to Inform Appropriate Assessment (RIAA) - to assess the LSEs of the Project on the integrity of the site and its conservation objectives and to consider ways to avoid or minimise any effects (Section 4);
- Stage 3: Assessment of Alternative Solutions; and
- Stage 4: Assessment of IROPI.

Stage 3 and Stage 4 are only triggered if no Adverse Effect on Site Integrity (AEOSI) cannot be concluded.

2 PROJECT DESCRIPTION

In accordance with the Petroleum Act 1998, Harbour Energy (the Applicant), is applying to DESNZ to obtain approval for decommissioning the subsea infrastructure associated with the Calder, Dalton and Millom or East Irish Sea ('EIS') infrastructure.

The Project is described in detail within Section 2 of the Developer's EA (Harbour Energy, 2024) and includes details of the subsea infrastructure to be decommissioned and the proposed decommissioning options.

An overview of the Project is provided here. Further particulars necessary for assessing specific impacts are described in subsequent sections of the HRA, as appropriate.

The Calder, Dalton and Millom Fields are in the EIS to the west of Blackpool. The Calder and Dalton fields are in Blocks 110/7a and 110/2b (respectively) of the United Kingdom Continental Shelf (UKCS) and Millom is in Blocks 113/26a, 113/27a and 113/27b. Harbour Energy (previously Chrysaor Resources (Irish Sea) Limited) took on operatorship of the Millom & Dalton facilities, pipelines, and wells from the previous duty holders (Spirit Energy) in 2022.

The Calder platform is a Normally Unattended Installation (NUI) that was installed in 2002, with first production occurring in October 2004. It is provided with power via an electrical cable from the South Morecambe Central Processing Platform (CPP1) while the piggybacked trunklines PL1965 and PL1966 extend from the Calder platform to the Rivers gas terminal near Barrow. The water depth at Calder is *c*. 28 m relative to Lowest Astronomical Tide (LAT).

The Dalton installations were installed in 1999, with first production being achieved in August 1999. The Dalton infrastructure is supported by and connected to the North Morecambe Drilling and Processing Platform Alpha (DPPA). The water depths at Dalton and DPPA are *c*. 37.5 m and *c*. 29 m respectively, relative to LAT.

The Millom West NUI (also connected to DPPA) was installed in 1999 with first production from the field occurring in August 1999. The Millom East pipeline end manifold (PLEM), Q1 & Q2 wellhead protection structure (WHPS) were installed in the same campaign as Dalton, while Q3 WHPS was installed a few years later in 2006. The water depths at Millom and DPPA are *c*. 41.8 m and *c*. 29 m respectively, relative to LAT.

Dates for decommissioning of the three fields are still being optimised by the Applicant. Preparatory decommissioning activities for Millom West, as agreed by OPRED, commenced in 2022. Following initial decommissioning and removal of the topsides, there may or may not be a period when the jackets remain in lighthouse mode prior to their removal. Decommissioning of associated subsea installations and infrastructure is expected to be undertaken during a 3 – 4 year window at a later period.

Well decommissioning / plug and abandonment (P&A) activities fall outside of the scope of the EA and the appropriate permits will be applied for in support of works carried out via the BEIS Portal

Environmental Tracking System (PETS). An application to decommission the wells will be made via the online WONS on the North Sea Transition Authority (NSTA) online portal, therefore, these activities have not been assessed in the HRA.

The location of the EIS infrastructure to be decommissioned is illustrated in Figure 2-1.

The EIS infrastructure are within proximity to a number conservation areas, highlighted in Figure 2-2. Short lengths of the Calder trunklines pass through the Liverpool Bay/Bae Lerpwl SPA, the Morecambe Bay and Duddon Estuary SPA and the Morecambe Bay SAC on their way to shore. The Dalton PLEM is 6 km from the nearest protected area (Liverpool Bay/Bae Lerpwl SPA) at its closest point.

2.1 HRA Scope

The decommissioning activities which are within the scope of this HRA include:

- Flushing and cleaning operations;
- Removal of topsides;
- Removal of jackets;
- Removal of subsea equipment (including protection and stabilisation materials);
- Remediation of pipeline spans by either removal or the application of rock placement;
- Remediation of cable crossing (Figure 2-2) by the application of rock placement; and
- Surveys of 500 m safety zones and of pipeline routes.

Therefore, these activities have the potential to have the following impacts within the scope of this HRA:

- Disturbance and displacement from airborne sound, visual and physical presence of vessels and infrastructure.
- Seabed Disturbance giving rise to:
    - Impact to the functioning of seabed habitats;
    - Increase in suspended sediment concentration and release of sediment bound benthic contaminants; and
    - Resettlement of suspended sediments on the seabed.

Disturbance from vessels includes transiting to and from ports, and a survey vessel along the pipeline route.

The seabed disturbance is limited to the immediate vicinity of;

- NUI, WHPS, PLEMs;
- Pipeline exposures (Figure 2-3); and
- Cable crossing (Figure 2-2).

These impacts are included in the assessment of LSE in Section 3.

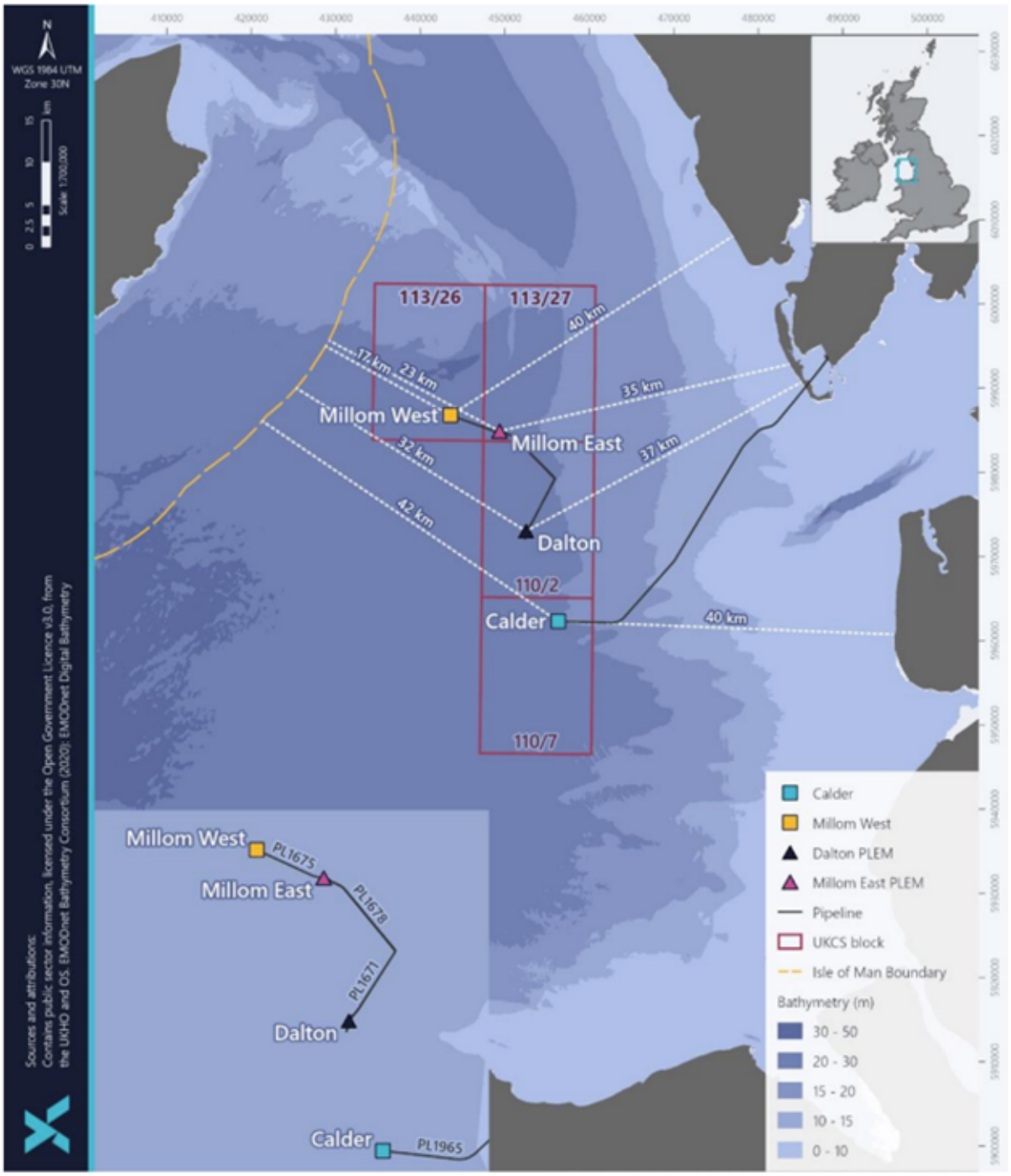

Figure 2-1: Location of the EIS infrastructure (Harbour Energy, 2024).

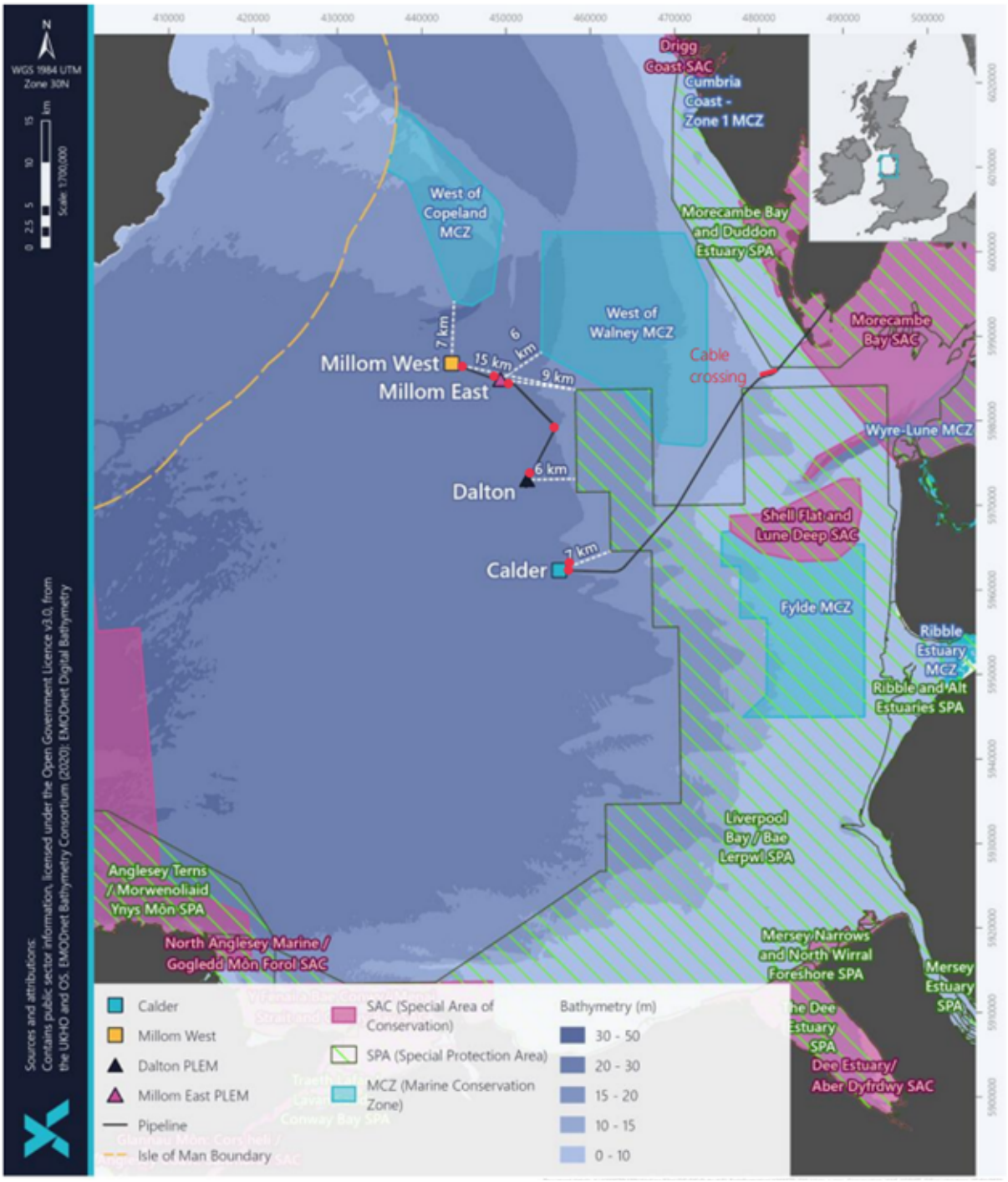

Figure 2-2: Location of the EIS infrastructure and designated conservation areas (Harbour Energy, 2024).

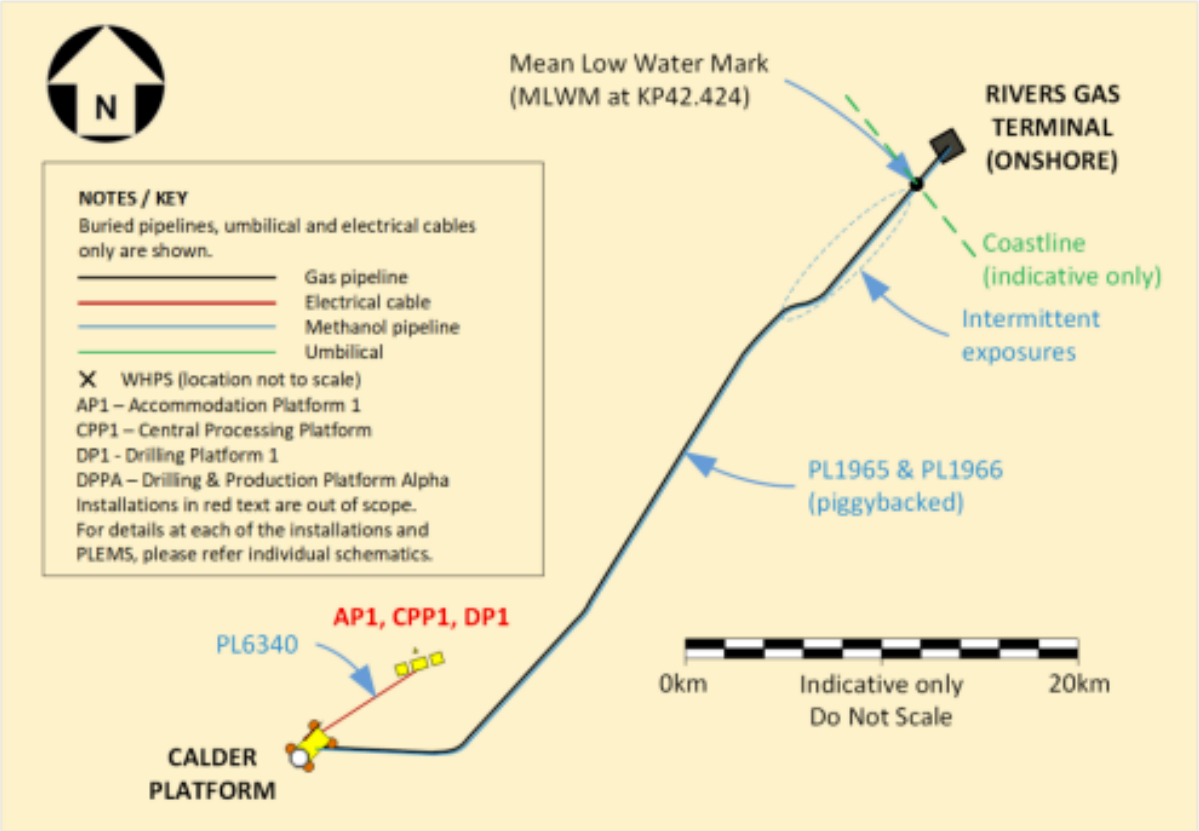

Figure 2-3: Schematic demonstrating area of exposures on Calder trunk lines.

3 HRA STAGE 1: LIKELY SIGNIFICANT EFFECTS TEST

3.1 Sites considered

Selection of sites for inclusion in the HRA has taken account of the mechanisms by which their features might be impacted and the distance over which an affect may be transmitted.

OPRED previously communicated to the applicant, during Scoping, that for this project a screening range of 40 km was appropriate for identifying sites designated for marine mammals since there were no activities of high impact noise sources. Since there are no sites designated for marine mammals within 40 km of the proposed decommissioning activities, no such sites require consideration in the HRA.

The applicant proposed a buffer of 5 km from sites designated for Annex I habitats and OPRED concurs that this is appropriate, given the limited extent of sediment mobilisation from the proposed activities. Any impact on natural sediment dynamics beyond 5 km can be concluded to be negligible. The Calder flowlines lie partly within the Morecambe Bay SAC but no other sites designated for Annex I habitats extend to within 5 km of the proposed works. The Morecambe Bay SAC is therefore considered within the HRA.

OPRED also concurs with the applicant's judgment that there would be no potential for impact on diadromous fish species while within even the nearest site for which they are designated, the Dee Estuary SAC which lies more than 50 km from the decommissioning works. Nor would the impacts of the activities inhibit access to or from the SAC. Once in open water, diadromous fish are able to range across extensive areas of the East Irish Sea and the wider Atlantic. Whereas they may potentially come within close proximity to the decommissioning activities at the time of seabed disturbance, any mortality is statistically likely only at an extremely low density of lamprey which would not have a significant effect at a population level. OPRED is therefore satisfied that no sites designated for diadromous fish require consideration within the HRA.

Sites designated for ornithological interests outside the breeding season that overlap with the decommissioning works require consideration. Those which do not overlap have been screened out. The Calder flowlines cross the Liverpool Bay SPA and the Morecambe Bay and Duddon Estuary SPA that are designated for wintering birds. These two sites are included in the HRA.

The applicant screened in sites designated for ornithological interests during the breeding season if the foraging ranges of the features for which they are designated overlap with the decommissioning activities. For this screening, foraging ranges were taken as the mean maximum range published in Woodward *et al.* (2019) plus one standard deviation. Since some species have been identified foraging over very large ranges, this led the applicant to an initial list of 137 sites extending from Shetland to Portugal. Sites within 150 km of the decommissioning activities which are designated for breeding seabirds with foraging ranges that would impinge on the works are listed in Table 3-1 along with the features of the site that may come into contact with the project. Breeding bird features from sites beyond

150 km would only interact with the project site if they had foraging ranges in excess of 200 km, such as lesser black-backed gull (238 km), puffin (265 km), black-legged kittiwake (300 km), northern gannet (509 km) and others of over 1,000 km. The foraging ranges of these birds present the entire Irish Sea (and further) to them for feeding and any potential disturbance to the foraging of these species in the project area would be over an insignificant extent of the available foraging grounds. OPRED is therefore satisfied that breeding birds from sites other than those in Table 3-1 will not be affected by the project.

Table 3-1: Assessment of SPAs considered for LSE on breeding seabird features.

SPA name	Qualifying breeding seabird features with foraging range overlapping proposed works	Distance from SPA coast to nearest proposed works (km) [1]	Mean Maximum Foraging range +1SD (km) [2]
Liverpool Bay	Common tern *(Sterna hirundo)*	23 (also, direct overlap with PL1965)	26.9
Morecambe Bay & Duddon Estuary	Common tern *(Sterna hirundo)*	0 (direct overlap with PL1965, which makes landfall within the SPA)	26.9
	Herring gull *(Larus argentatus)*		85.6
	Lesser black-backed gull *(Larus fuscus)*		236
	Little tern *(Sternula albifrons)*		5
	Sandwich tern *(Thalasseus sandvicensis)*		57.5
Dee Estuary	Sandwich tern *(Thalasseus sandvicensis)*	52	57.5
Ribble and Alt Estuaries	Lesser black-backed gull *(Larus fuscus)*	28	236

Table 3-1 is based on distances from the assets to be decommissioned to the coastline of SPAs rather than the seaward limit of the SPA, since foraging distances are taken from potential nesting sites.

3.2 Assessment of LSE

The purpose of this section is to identify any LSEs on relevant European sites and to record the conclusions on the need for an AA and the reasons for including activities, sites or plans and projects for further consideration in the AA.

3.2.1 Morecambe bay SAC

Sections of the Calder trunklines pass through the Morecambe Bay SAC between Walney Island and the Rivers Gas terminal near Barrow-in-Ferness. The trunklines will be decommissioned *in situ*, and there are no works intended within the SAC. The decommissioning activities include placement of rock to protect the crossing point of the decommissioned pipelines with a series of cables which are sited approximately 4 km to seaward from the SAC boundary. As the activities lie outside of the SAC the

Annex 1 habitats themselves will not be directly disturbed. However, there is the potential to impact Annex 1 habitats on the seabed through mobilisation of potential contaminants and sediment deposition. Annex 1 terrestrial habitats will not be affected by increased sediment suspension and deposition on the scale produced by the project.

3.2.2 Morecambe Bay and Duddon Estuary SPA

Sections of the Calder trunklines pass through the Morecambe Bay and Duddon Estuary SPA on the approach to Walney Island and between Walney Island and the Rivers Gas terminal.

Vessels will be working within 1 km of the SPA to install rock cover over the trunkline crossing of third party cables. Survey vessels will also work along the section of trunklines, and it is anticipated that decommissioning vessels may transit through the SPA from ports *en route* to in-field assets.

The impact from the physical presence of vessels, and from light and noise they generate, on the breeding and non-breeding seabird features of the site require consideration by AA.

Activities that disturb the seabed at the cable crossing and pipeline exposures may cause increased suspended sediment concentrations (SSC) in the water column which may affect visibility and may consequently reduce prey availability and foraging success of site seabird features. Increases in SSC from decommissioning activities on the seabed will be highly localised and could be expected to be within the range of naturally elevated SSC caused during storms. This may result in minor short term, reversible, and temporary behavioural disturbance of the qualifying features of the Morecambe Bay and Duddon Estuary SPA. However, this is not considered to cause an LSE for the designated features of this site and is therefore screened out of further assessment.

3.2.3 Dee Estuary SPA

The Calder NUI and the initial part of the Calder trunklines lie within the outer reaches of the foraging range of breeding sandwich terns of the Dee Estuary SPA. Whereas Calder NUI topsides removal will not be undertaken in the breeding season, works for the recovery of subsea infrastructure and surveys of the seabed and pipeline burial depth may be.

Vessels undertaking decommissioning activities may directly disturb breeding birds leading to displacement from foraging areas, causing birds to move elsewhere, potentially affecting breeding productivity or survival rates at an individual or population level. A single, localised disturbance event does not have an immediate effect on the survival or productivity of an individual bird. However, repeated disturbance events could lead to displacement affecting the survival and productivity of a bird.

Sandwich terns are not considered vulnerable to disturbance and have a moderate habitat flexibility (Wade *et al*., 2016). Consequently, given the small extent of overlap with the foraging range of sandwich tern, the limited duration of the works and the limited sensitivity to disturbance, OPRED is satisfied that there would not be a LSE to the sandwich tern feature of the Dee Estuary SPA.

3.2.4 Ribble and Alt Estuaries SPA

All of the proposed decommissioning activities lie within the foraging range of the lesser black-backed gull feature of the Ribble and Alt Estuaries SPA. With a foraging range of up to 236 km, lesser black-backed gulls from this site can forage across the Irish Sea from Cardigan and Wicklow to Larne and Stranraer. Whereas the area of proposed decommissioning activities is small within this context, it is relatively close to the nesting grounds. However, lesser black-backed gulls are not considered sensitive to disturbance and have a high habitat flexibility (Wade *et al.,* 2016). Consequently, OPRED is satisfied that any disturbance from vessels undertaking the decommissioning activities will not result in LSE to lesser black-backed gulls of the Ribble and Alt Estuaries SPA.

3.2.5 Liverpool Bay SPA

The Calder trunklines cross the Liverpool Bay SPA at two sections and much of the trunkline route lies within the foraging range of common tern from the Fylde coast section of the site. None of the in field assets to be decommissioned lie within the foraging range of breeding bird features of the site.

Whereas the ports to be used for mobilising vessels for the decommissioning works have not been selected, it is probable these may include one or more local ports such as Liverpool, Barrow and Heysham. Vessels from these ports would transit across the Liverpool Bay SPA to the in-field assets being decommissioned. Survey vessels will also work along the Calder trunkline route. Rock lay vessels will operate at the cable crossing point which lies 2 km from the Liverpool Bay SPA, and at locations of pipeline exposures.

Common terns are not considered vulnerable to disturbance and have a moderate habitat flexibility (Wade *et al.,* 2016) and OPRED is satisfied that the decommissioning works will not lead to LSE to common terns of the Liverpool Bay SPA.

Seabird features of the Liverpool Bay in the non-breeding season are the common scoter (*Melanitta nigra*), red-throated diver (*Gavia stellata*) and the little gull (*Hydrocoloeus minutus*). There is potential for LSE to these features due to disturbance by the physical presence of vessels, including from the light and noise they generate.

Activities that disturb the seabed at the cable crossing may cause increased SSC in the water column which may affect visibility and may consequently reduce prey availability and foraging success of site seabird features. Increases in SSC from decommissioning activities on the seabed will be highly localised and could be expected to be within the range of naturally elevated SSC caused during storms. This may result in minor short term, reversible, and temporary behavioural disturbance of the qualifying features of the Liverpool Bay SPA. However, this is not considered to cause an LSE for the designated features of this site and is therefore screened out of further assessment.

3.3 Conclusion of LSE

OPRED conclude that LSE cannot be ruled out for the specific features of three sites. These are presented in Table 3-2 along with the threat identified that has the potential to cause LSE. The specific threats to the listed features are subjected to AA.

Table 3-2 Features for which LSE cannot be excluded.

Site	Feature	Potential LSE
Morecambe Bay SAC	Sandbanks which are slightly covered by seawater all the time	Alteration of habitat due to increased sedimentation from the resettlement of sediments that have been mobilised during seabed disturbance when installing rock protection over cable crossing and exposed sections of the trunklines.
	Coastal lagoons	
	Reefs	
	Estuaries	
	Mudflats and sandflats not covered by seawater at low tide	
	Large shallow inlets and Bays	
Morecambe Bay and Duddon Estuary SPA	Common tern	Disturbance from foraging grounds during the breeding season due to the presence of vessels, including from the light and noise they generate.
	Herring gull	
	Lesser black-backed gull	
	Little tern	
	Sandwich tern	
	Lesser black-backed gull	Disturbance from supporting habitat within the SPA during the non-breeding season due to the presence of vessels, including from the light and noise they generate.
	Mediterranean gull	
Liverpool Bay SPA	Common scoter	Disturbance from supporting habitat within the SPA during the non-breeding season due to the presence of vessels, including from the light and noise they generate.
	Red-throated diver	
	Little gull	

4 HRA STAGE 2: APPROPRIATE ASSESSMENT

The purpose of this AA is to determine whether or not an adverse effect on the integrity of the features of the sites identified can be ruled out as a result of the Project, alone or in combination with other plans and projects, in view of the site's conservation objectives and using the best scientific evidence available.

Whereas the LSE screening process establishes that a link exists between a source of impact and the conservation features of interest, and that this has the potential to result in significant impact, the AA considers whether the scale of impact is such that the integrity of the site would be adversely affected. The AA also takes account of measures, secured as commitments through Mitigation Measures that will either remove the pathway for impact or minimise the likelihood or extent of impact.

5 APPROPRIATE ASSESSMENT FOR LIVERPOOL BAY / BAE LERPWL SPA

5.1 Information on the SPA

The Liverpool Bay / Bae Lerpwl SPA covers an area of 2,528 km^2, encompassing marine areas supporting large aggregations of wintering red-throated diver and common scoter as well as important marine foraging areas of little terns breeding within The Dee Estuary SPA, and foraging areas of common terns breeding at the Mersey Narrows & North Wirral Foreshore SPA.

In October 2017 the original site was reclassified with the addition of new protected features and associated boundary amendments. Of particular relevance to this AA is the incorporation of important areas for non-breeding little gull (*Hydrocoloeus minutus*) over the winter period (October to March). At the time of the SPA extension, it protected the largest aggregation of common scoters, the largest marine aggregation of little gull, and the third largest aggregation of red-throated diver in the UK.

The in-field assets at Calder, Dalton and Millom lie at least 7 km to seaward of the Liverpool Bay SPA , with the Calder NUI being the nearest point.

The Calder trunklines transect the Liverpool Bay SPA in two locations. No works are planned on these sections of the trunklines although survey vessels will traverse their length both pre- and post-decommissioning. Furthermore, rock will be placed at the crossing of the trunklines with power cables at a point that is approximately 2 km from the SPA boundary.

Vessels will also transit through the SPA between ports and the assets being decommissioned.

The qualifying features of the SPA that are relevant to the activities covered by this HRA are Red-throated diver (non-breeding), Little gull (non-breeding), and Common scoter (non-breeding).

The conservation objectives for the Liverpool Bay SPA are to ensure that, subject to natural change, the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the aims of the Wild Birds Directive:

- Conservation Objective 1 – The extent and distribution of the habitats of the qualifying features;
- Conservation Objective 2 – The structure and function of the habitats of the qualifying features;
- Conservation Objective 3 – The supporting processes on which the habitats of the qualifying features rely;
- Conservation Objective 4 – The population of each of the qualifying features; and
- Conservation Objective 5 – The distribution of the qualifying features within the site.

The principal conservation attribute that could be affected by the temporary increase in vessel activity is the disturbance caused by human activity. For each feature, the target set in relation to this attribute is to minimise the frequency, duration and/or intensity of disturbance affecting the feature so that the population, its distribution within the site, or its use of the habitat is not significantly affected.

5.2 Feature Accounts

The following section presents feature accounts for all features of the Liverpool Bay SPA which have been scoped in for AA.

5.2.1 Red-throated diver

Although not regarded as threatened within the EU, the conservation status of this species is regarded as unfavourable because of declines in the European breeding population between 1970 and 1990. The population is now considered stable though depleted.

The non-breeding population of red-throated divers in Great Britain is estimated to be 17,166 individuals (O'Brien *et al*., 2008), representing between 10 % and 19 % (depending on the areas included) of the northwest Europe biogeographical non-breeding population.

Wintering aggregations of red-throated divers are present within the Liverpool Bay SPA between November to March, with an estimated SPA population of 1,800 individuals (HiDef, 2023). Recent mean density estimates of red-throated divers within the SPA (original extent prior to expansion in 2017) range between 0.22-1.22 birds/km^2, with densities increasing year on year (HiDef, 2023). Mean densities range between 0-1.74 birds/km^2 (Lawson *et al.,* 2015). Red-throated divers have highest densities off the Ribble Estuary, North Wales, and North Wirral Foreshore, preferring shallow coastal waters through Liverpool Bay (Natural England *et al.,* 2022).

The conservation target for the abundance of red-throated diver of the SPA is to maintain the non-breeding population at a level which is at or above 1,800 individuals.

Wintering red-throated divers are associated with shallow inshore waters, typically between 0 – 20 m deep and less frequently in depths of around 30 m.

Red-throated divers are considered to have a high vulnerability to disturbance and have a low habitat flexibility meaning they are restricted in terms of the habitats they are able to exploit. They are opportunistic feeders, diving below the surface to catch small fish at shallow depths and forage on the seabed in some environments (Duckworth *et al*., 2021) and are particularly sensitive to elevated levels of turbidity which may reduce their foraging success (Joint Nature Conservation Committee (JNCC), 2022).

Red-throated divers are especially sensitive to disturbance at sea (Garthe & Huppop, 2004) and usually avoid boats and established shipping channels (JNCC, 2022). They often flush from large distances, relocating even further away from the source of disturbance (Goodship & Furness, 2022). Red-throated divers are known to be displaced by marine industry activities but the energetic, physiological and demographic consequences of displacement are currently unknown. If divers are already energetically constrained they may struggle to meet the additional energetic demands following displacement.

Supporting habitats may have a functional role in supporting their prey species, for example as nursery, spawning or feeding grounds or in providing shelter. Loss or damage to supporting habitats may cause a loss of foraging sites and therefore lead to a reduction in food resources.

When Liverpool Bay SPA was first classified in 2010, red-throated divers had an estimated area of 1702.93 km^2. This baseline area included windfarms that were present at the time of classification. As a result of further wind farm development, red-throated divers in Liverpool Bay SPA have experienced a reduction in available supporting habitat. Post construction monitoring between 2017 and 2020 has indicated that there are detectable displacement effects from the Burbo Bank extension windfarm in Liverpool Bay SPA (HiDef, 2020). Although the physical supporting habitat may still be present, disturbance and displacement from wind farms has meant that some areas are no longer accessible for red-throated divers (JNCC, 2022).

This level of displacement is not anticipated for the decommissioning activities, which will introduce no new structures above the sea surface and instead involve the removal of the existing Calder and Millom West topsides and jackets, which were previously considered to form part of the site baseline footprint at the time of designation.

5.2.2 Common scoter

Common scoter are most abundant within the SPA between November to March, with a population estimate of 141,801 individuals (HiDef, 2023; JNCC, 2022). Maintenance of this population level has been adopted as the conservation target for the abundance of common scoter in the Liverpool Bay SPA.

Common scoter densities within the SPA boundary range from 46.41-119.12 birds/km^2, with densities showing declines year on year (HiDef, 2023). Common scoters aggregate largely around Red Wharf Bay and Conwy Bay, Great Orme's Head to the North Wirral Foreshore, and off Blackpool (Natural England *et al.,* 2022; Lawson *et al.,* 2015). Over-wintering common scoter aggregate in shallower waters (2 - 20 m) with their distribution associated with benthic prey species (Natural England *et al.,* 2022). They feed by diving for cockles, clams, other bivalves, and a variety of other molluscs, crustaceans, and worms and the distribution of common scoter in Liverpool Bay SPA is strongly associated with the distribution of its benthic prey species and closely associated with the availability and condition of their shallow seabed habitat (JNCC, 2022).

The Liverpool Bay SPA consists of 10.31 % of the north-western European common scoter population (Natural England, 2009).

Common scoters have a more clustered distribution within Liverpool Bay than red-throated divers, with highest concentrations recorded from three broad areas (Webb *et al*., 2006):

- Red Wharf Bay (Anglesey) and Conwy Bay;
- Great Orme's Head to the North Wirral Foreshore;
- Formby Point to Shell Flat (off Blackpool).

Common scoters arrive in Liverpool Bay in large numbers from October onwards and start to depart for the breeding grounds in February. Some birds remain in Liverpool Bay over the summer period, but these tend to be immature or birds that are moulting.

The conservation advice from NRW and NE has attributed targets set as 'Maintain' for common scoter due to evidence that the feature is in favourable condition within the site.

As with red-throated diver, common scoter is highly susceptible to disturbance at sea often flushing from large distances and relocating even further away from the source of disturbance (Goodship & Furness, 2022).

Kaiser *et al.* (2006) noted that large flocks of the birds were observed being put to flight at a distance of 2 km from a 35 m vessel. Smaller flocks were less sensitive but conversely, larger vessels are expected to have an even greater disturbance distance (Kaiser *et al.*, 2006).

As with red-throated divers, common scoters are found in low numbers or are absent from areas of intense shipping activity such as existing shipping channels.

5.2.3 Little gull

In 2017 the SPA was extended to include an area identified as supporting the second largest aggregation of little gulls in the UK (Natural England *et al.,* 2022). The extension forms the northern part of the SPA, where it is closest to the Calder NUI and includes a section of the Calder trunkline.

The non-breeding aggregation of little gull is estimated at 333 individuals (Lawson *et al.,* 2015). Maintenance of this population level has been adopted as the conservation target for the abundance of little gull of the SPA.

Little gulls are observed in clearly defined hotspots within the SPA, with highest densities consistently found to be offshore of Blackpool and the Ribble Estuary, close to the 12 nm line.

There is little evidence that little gull is sensitive to disturbance and displacement from airborne sound and presence of vessels and infrastructure (Goodship & Furness, 2022). Reviews of the sensitivity of different seabird species to disturbance from vessels and helicopter traffic have not assessed little gull, although generally gulls are considered not to be sensitive to disturbance or displacement by the physical presence of vessels and that is predicted to be the case for little gull (Furness *et al*., 2013, Bradbury *et al*., 2014; MMO, 2018).

Little gull feed at or immediately below the water surface.

Conservation status is currently considered to be in favourable condition (Natural England, 2010).

5.3 Impact Mechanism

Potential for LSE to features of the Liverpool Bay SPA could not be excluded for one mechanism of impact. This is disturbance of common scoter, red-throated diver and little gull from their supporting habitat within the SPA during the non-breeding season due to the presence of vessels, including from the light and noise they generate.

Most of the decommissioning activities will take place outside of the SPA, at the in-field assets. However, the activities will require a variety of vessel types to transit through the SPA *en route* from ports to the assets being decommissioned. In addition, a survey vessel is required to survey the length of the Calder trunklines route, which includes two sections through the SPA. One section is between 5 km and 10 km in length, the other between 1 km and 2km in length.

The presence and operation of vessels within the SPA can result in disturbance of seabirds, causing them to relocate. For the duration of displacement, displaced birds may move to areas already occupied by other birds and thus face higher intra/inter-specific competition due to a higher density of individuals competing for the same resource. Alternatively, displaced birds may be forced to move into areas of lower quality (e.g. areas of lower food resources). The displacement could ultimately affect their demographic fitness (i.e. survival rates and breeding productivity) as well as potentially impacting on other birds in areas that displaced birds move to. Such impacts have the potential to lead to a change in the size or extent of distribution of the biogeographic population.

Whilst this will be a transient and temporary impact, there is potential for LSE and hence this impact pathway was screened into this AA.

5.4 Appropriate Assessment for the Project Alone

Baseline shipping traffic in the Project area is assessed as moderate (1,000 – 5,000 vessels per annum), with more nearshore areas being assessed as low density (<1,000 vessels per annum). The baseline shipping in areas of the Liverpool Bay SPA can reach up to 200 transiting vessels per 2 km^2 per week, and higher than this along the established approach to the port of Liverpool. Figure 5-1 presents Automatic Identification System (AIS) data illustrating the shipping track lines present within the SPA.

The Applicant has provided a plan for the vessels required for the completion of all decommissioning works and has estimated, as a worst case, that transiting vessels would be present in the SPA for a maximum of 18 days while transiting to work locations from any port that may be selected as the service base(s) for decommissioning. These may be at any time within the decommissioning schedule window. Some of the activities, specifically including topsides removals of NUIs, will take place outside of the breeding season to avoid disturbing nesting kittiwakes, but other activities are more likely to be undertaken in the summer months.

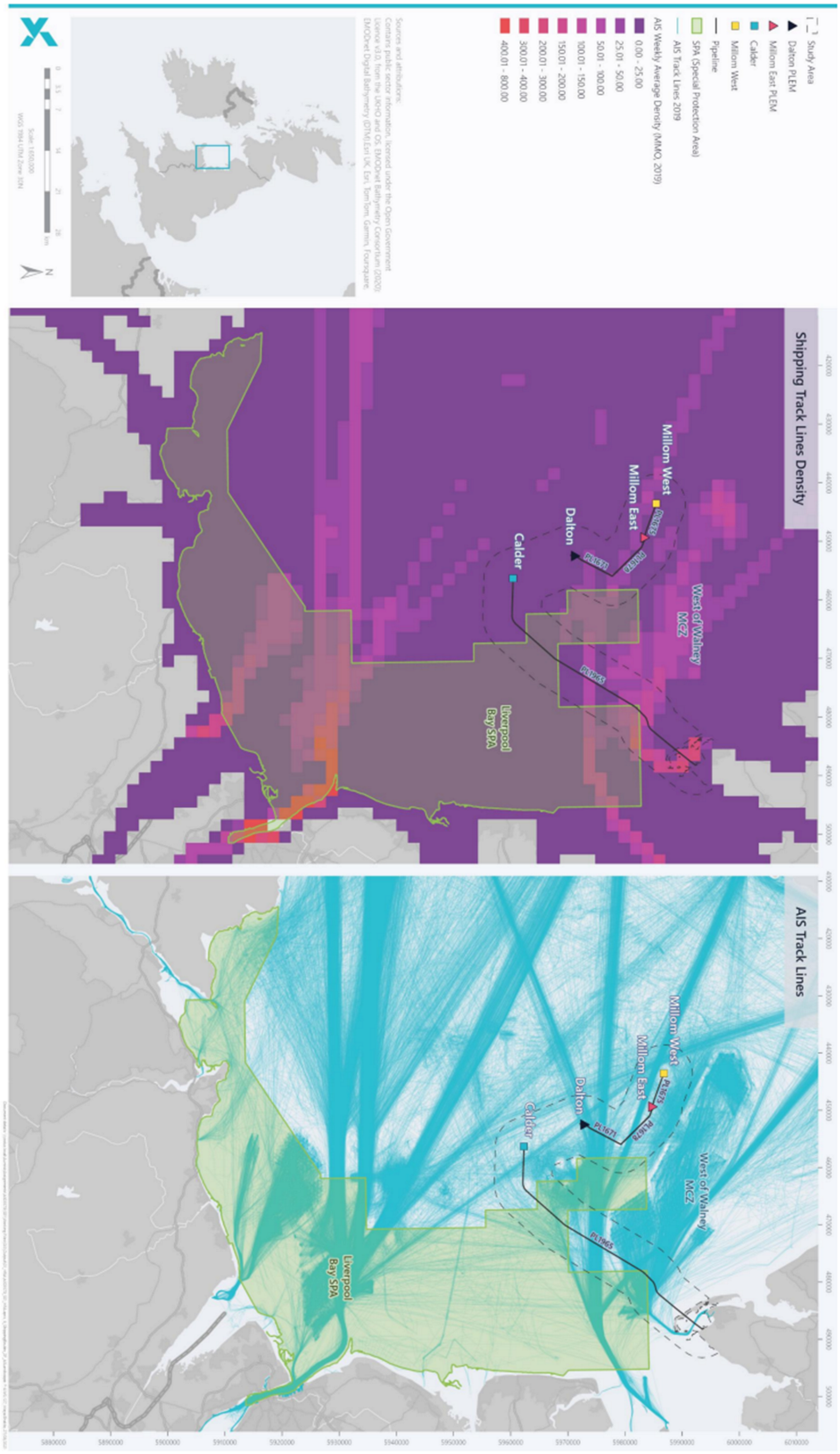

Figure 5-1: AIS data illustrating baseline shipping activity across Liverpool Bay SPA (Harbour Energy, 2025).

5.4.1 Common scoter and red-throated diver

JNCC advice is that all red-throated divers could be displaced from within 2 km from a vessel (Burt *et al.,* 2017; Burger *et al.,* 2019), and all common scoters could be displaced from within 2.5 km of a vessel (Fliessbach *et al.,* 2019). The maximum displacement area at any one point from a vessel is 13 km^2 and 20 km^2, respectively.

Table 5-1 presents the Applicant's estimate of the number of red-throated diver and common scoter disturbed by transiting vessels within the Liverpool Bay SPA, based on this advice. The number of birds disturbed is based on the four-year peak mean density estimates of birds across the SPA (HiDef, 2023).

Table 5-1: Number of red-throated diver and common scoter disturbed by *transiting vessels* within the Liverpool Bay SPA (Harbour Energy, 2025).

INFRASTRUCTURE	TRANSIT DISTANCE WITHIN SPA (KM)[1]	BIRD DENSITY WITHIN SPA (BIRDS/KM^2)[2]	NO. OF BIRDS DISTURBED AT ANY ONE POINT[3]	% POPULATION OF SPA DISTURBED AT ANY ONE POINT[4]
Red-throated diver				
Calder	61.8	1.06	13.78	0.76
Dalton	72.2	1.06	13.78	0.76
Millom West	88.5	1.06	13.78	0.76
Common scoter				
Calder	61.8	83.53	1,671	1.17
Dalton	72.2	83.53	1,671	1.17
Millom	88.5	83.53	1,671	1.17

[1] Distance between Liverpool Bay Port and infrastructure
[2] Four-year peak mean density estimates calculated HiDef (2023) (Table 13)
[3] Assuming a vessel displacement area of 13 km^2 for red-throated diver and 20 km^2 for common scoter
[4] Based on count data from HiDef (2023): 1,800 red-throated divers and 141,801 common scoters

The assessment shows that without mitigation up to 0.76 % of the red-throated diver and 1.17 % of common scoter populations in the SPA could be disturbed at any one point.

The Applicant has committed to several measures to reduce these potential disturbance impacts on the non-breeding population of common scoter and red-throated divers. These include selection of routes when transiting to the site that avoids aggregations of red-throated divers, where practicable; using existing navigational routes wherever possible; and minimising noise disturbance, which will reduce the impacts, should vessels cross areas of higher bird densities.

Surveys of common scoter, red-throated diver in the Liverpool Bay suggest that these species largely avoid established shipping channels (HyDef, 2023), as would be expected by their sensitivity to disturbance. As such, the proportion of the SPA populations of common scoter and red-throated diver that would be disturbed by transiting vessels using established shipping channels while within the SPA is anticipated to be significantly lower even than those shown in Table 5-1.

The survey vessel working along the Calder trunklines route is estimated to be within the Liverpool Bay SPA for 0.5 days. The trunklines cross the SPA in its far northern section, beyond the area of particular significance for non-breeding common scoter and red-throated diver and where there densities are low.

The Applicant calculated that during this half day, between 0.20% and 0.39% of the common scoter population, and 0.065% and 0.12% of the red-throated diver population of the SPA may be displaced due to disturbance from the survey vessel. These percentages were based on densities derived from Lawson *et al*. (2015) based on the area of overlap with PL1965.

Given the minimal displacement estimated both from survey vessels and transiting vessels, coupled with the short term, transient and localised nature of vessel transits, OPRED is satisfied that displacement effects are not anticipated to result in significant adverse pressures on the SPA population levels.

To further reduce any residual minor impact to these features, the Applicant has also committed to liaising with OPRED and JNCC to confirm expectations for scheduling.

5.4.1 Little gull

Established shipping channels from ports at Barrow and Heysham traverse the northern section of the SPA and, should these ports be selected for supporting the decommissioning works, the works will increase the shipping traffic. Notwithstanding the established baseline shipping intensity, this part off the SPA was specifically added due to its importance in the non-breeding season for supporting the second largest aggregation of little gulls in the UK (Natural England *et al.,* 2022). This, concurred by other observations, suggest that Little gulls are not sensitive to disturbance or displacement by the physical presence of vessels and the decommissioning works would therefore not result in an adverse impact on this feature of the SPA.

5.5 Conclusion of AA for Liverpool Bay SPA

The nature and location of the decommissioning works will not impact the structure, function or supporting processes provided by habitats within the SPA.

Displacement during the decommissioning activities is small in scale, short term and reversible. As such, no impact is anticipated to the population of any of the non-breeding qualifying features of the SPA.

Given the commitment to use established shipping channels while transiting the SPA, disturbance by decommissioning vessels will not significantly affect the distribution of the features within the site.

OPRED has consequently concluded that the proposed decommissioning project alone will not cause an adverse effect on the integrity of the Liverpool Bay SPA.

6 APPROPRIATE ASSESSMENT FOR MORECAMBE BAY AND DUDDON ESTUARY SPA

6.1 Information on the SPA

The Morecambe Bay and Duddon Estuary SPA encompasses large parts of Morecambe Bay, The Duudon Estuary and Ravenglass estuary, including areas of terrestrial coastal habitat at North and South Walney and at Haverigg Point on the Duddon Estuary and the lagoons at South Walney; Cavendish Dock, Barrow and Hodbarrow, Haverigg. From central Morecambe Bay the seaward boundary runs offshore around Walney Island and along the southwest Cumbria Coast, reaching a maximum of 8 km offshore opposite Kirksanton Haws, meeting the coast again at Drigg Dunes to the north of Ravenglass estuary (Natural England, 2017).

The site incorporates the formerly separate sites of Morecambe Bay SPA and Duddon Estuary SPA.

Morecambe Bay is the second largest embayment in Britain after The Wash, at over 310 km^2, and includes the Wyre, Lune, Kent and Leven estuaries. It contains the largest continuous area of intertidal mudflats and sandflats in the UK which supports a variety of infaunal communities including cockle beds. Morecambe Bay supports a wide range of other habitats including large areas of saltmarsh and transitional habitats as well as sand dune systems and coastal lagoons. Within the Bay there are areas of stony reef (known locally as scars or skears) which also support blue mussel beds and honeycomb worm *Sabellaria alveolata* reefs. Extensive eelgrass beds are present around Foulney Island and in the south Walney Channel, the only examples in the northwest of England (Natural England, 2017).

The Duddon and Ravenglass Estuaries support saltmarsh, intertidal mud and sand communities and sand dune systems with small areas of stony reef. The intermediate coast comprises extensive shingle and sand beaches. The parts of the SPA away from the coast are sandy and shallow, mostly less than 15 m deep.

The Calder trunklines traverse the offshore section of the SPA for approximately 5 km, running southwest from South End on Walney Island.

The Conservation Objectives for the protected features of the SPA are to ensure that subject to natural change, the integrity of the site is maintained or restored as appropriate, and to ensure that the site contributes to achieving the aims of the Wild Birds Directive, by maintaining or restoring (Natural England, 2019):

- The extent and distribution of the habitats of the qualifying features;
- The structure and function of the habitats of the qualifying features;
- The supporting processes on which the habitats of the qualifying features rely;
- The population of each of the qualifying features; and
- The distribution of the qualifying features within the site.

6.2 Feature Accounts

The breeding seabird features of the SPA and the non-breeding seabird features have been identified as being potentially affected by disturbance from vessels undertaking the pipeline stabilisation works, undertaking surveys of the pipeline, and vessels transiting the SPA from supporting ports to the in-field assets of Calder, Dalton and Millom, as summarised in Table 3-2.

6.2.1 Common tern

The common tern is listed in Annex I of the Birds Directive (JNCC, 1999), with an estimated UK breeding population of 10,000 pairs (Musgrove *et al*., 2013), representing at least 2 % of the Northern and Eastern European breeding population (500,000 pairs derived by division by 3 of the upper estimate of 1,500,000 individuals: AEWA, 2012). A significant proportion of the British population breeds in Scotland. Coastal colonies in England are concentrated in the north-east, East Anglia, at a few localities along the south coast, and in the north-west (Mitchell *et al*., 2004). Common terns breed not only around coasts but, unlike the other tern species which breed in the UK, also breed frequently beside inland freshwater bodies.

Common terns were a qualifying feature of the original Morecambe Bay SPA, holding 285 pairs according to the citation (1991). This represented 2 % of the GB population at time of classification. The largest (maximum 250-300 pairs) common tern colony within the SPA, on Colloway Marsh in the Lune Estuary, declined in the late 1980's and was subsequently lost. Data between 2010 and 2014 showed that the five-year peak mean to have declined to 47 pairs; this value included birds nesting at Foulney Island (<5 km east of the Calder trunklines landfall) and Hodbarrow (approximately 16 km north of the trunklines landfall, within the Duddon Estuary). Management action has been taken to recover the sites to a favourable condition for nesting common tern and other tern species (Natural England, 2014). The most recent global assessment of common tern against The International Union for Conservation of Nature (IUCN) Red List of Threatened Species categorised the species as "Least Concern" (IUCN, 2024).

6.2.2 Little tern

The little tern is listed in Annex I of the Birds Directive (JNCC, 1999), with an estimated UK breeding population of 1,900 pairs (Musgrove *et al*., 2013), representing about 10.3% of the Eastern Atlantic breeding population (18,500 pairs derived by division by 3 of the upper estimate of 55,500 individuals: AEWA, 2012). Breeding occurs in scattered colonies along much of the east and west coasts of Britain, from the north of Scotland to the south coast of England (Mitchell *et al.*, 2004). The greater part of the population occurs in south and east England from Dorset to Norfolk (Mitchell *et al.*, 2004). All British little terns nest on the coast, utilising sand and shingle beaches and spits, as well as tiny islets of sand or rock close inshore (Mitchell *et al*., 2004).

The long-term trend in Great Britain has been upward, with a 22 % increase between censuses in 1969-70 and 1999-2002 (Mitchell *et al*., 2004), although there has been a decrease of nearly 9 % between 1999 and 2011 (JNCC, 2012).

Population decline has been attributed to reductions in breeding success rather than to emigration or changes in adult survival (Pickerell, 2004). Human disturbance at nesting locations, primarily as an unintentional result of recreation activity, is thought to have been a major cause of reduced breeding success in the past but now most colonies are wardened and cordoned off, greatly reducing such disturbance. More significant now is predation from foxes, kestrels, carrion crows and magpies, which are widely reported to cause colony failure or at least severe reduction to breeding success (Pickerell, 2004). Natural erosion and encroachment of vegetation have in many places reduced the area of suitable nesting habitat. Because little terns habitually nest very close to the high-water mark, tidal inundation during storm surges is a frequent cause of nest loss; given predictions of future sea level rise and increase in storminess, these threats would be expected to become increasingly prevalent (Pickerell, 2004).

Little terns were a qualifying feature of the original Morecambe Bay SPA, holding 29 pairs. This represented 1 % of the UK population at that time. Data (2010-2014) showed the five year peak mean to have increased to 42 pairs (2.2 % of UK population). Little terns are categorised as “Least Concern” on the IUCN Red List (IUCN, 2024).

6.2.1 Sandwich tern

The sandwich tern is listed in Annex I of the Birds Directive (JNCC, 1999), with an estimated UK breeding population of 11,000 pairs (Musgrove *et al*., 2013), representing about 19.3 % of the Western Europe/West Africa breeding population (AEWA, 2012). In the UK, the species is restricted to relatively few large colonies, most of which are on the east coast of Britain with a few smaller ones on the south and north-west coasts of England and in Northern Ireland. Colonies are mostly confined to coastal shingle beaches, sand dunes and offshore islets (Mitchell *et al*., 2004).

Sandwich terns were a qualifying feature of the original Morecambe Bay SPA, holding an average 720 pairs in 1991, and 422 pairs in 1997. This represented 5 % and 3 % of the UK population at time of classification. It was also a feature of the Duddon Estuary SPA, holding an average 210 pairs (1.5 % of the UK population at time of classification). Latest data (2010-2014) showed the five year peak mean to have declined to 40 pairs; this value includes birds nesting at Foulney Island (within the Morecambe Bay SPA) and Hodbarrow (within the Duddon Estuary SPA). Although there have been declines in the number of pairs settling to nest, information from Royal Society for the Protection of Birds (RSPB) site managers at Hodbarrow indicates that larger numbers of sandwich terns continue to arrive on site earlier in the breeding season. This suggests that terns are still prospecting to breed at the site and helps to justify both their retention on the citation and the marine foraging extension. Management action has been taken at Foulney Island and Hodbarrow Lagoon to restore the sites for nesting sandwich tern and

other tern species. Sandwich terns are categorised as “Least Concern” on the IUCN Red List (IUCN, 2024).

6.2.2 Herring gull

The breeding gull colony of the South Walney and Piel Channel Flats Site of Special Scientific Interest (SSSI), within the Morecambe Bay and Duddon Estuary SPA is of national and international importance for its numbers of herring gull (Thaxter *et al.,* 2017). The breeding population of herring gulls in the UK is estimated to be 130,000 pairs (Musgrove *et al*., 2013). This estimate relates to the race *argenteus*, which all UK breeding birds are considered to belong to (Wetlands International, 2015). Herring gulls have declined markedly in recent years (-30% in the UK between 2000 and 2013; JNCC 2014) and are now on the IUCN Red List of Threatened Species because of longer-term declines, categorised as “Least Concern” (IUCN, 2024).

Thaxter *et al* (2017) assessed the habitat use of the breeding herring gull colony of the South Walney and Piel Channel Flats Site of Special Scientific Interest (SSSI), within the Morecambe Bay and Duddon Estuary SPA. A wide variation in habitat use was recorded among birds. Birds remained within the northwest region across the year, travelling no further south than the Mersey Estuary, and with some individuals making substantive use of the colony area even through the non-breeding period. Birds frequented intertidal mudflats, as well as terrestrial habitat such as fields, gravel workings, rubbish dumps and freshwater bodies. Mussel bed areas were also used, with some clear patterns in the foraging distributions indicating regular movements of the population to certain patches. Areas near to the colony were used most frequently. Birds made most use of the South Walney and Piel Channel Flats SSSI, which encompassed the breeding colony, but some use of other SSSIs within the SPA (with the exception of Roudsea Woods & Marshes SSSI) was also recorded.

Herring gulls were a qualifying feature of the original Morecambe Bay SPA, holding 10,000 pairs. This represented 7 % of the UK population at time of classification, though the proportion of the biogeographic population is not given (retrospectively this has been calculated as 1.0 %). It was not a feature of the Duddon Estuary SPA, as only very small numbers of pairs breed at Hodbarrow. Data (2011-2015) showed the five year peak mean to have declined to 1,596 pairs (0.5 % biogeographic population of 340,000 pairs); this value includes birds nesting at South Walney and Hodbarrow. Management action has been undertaken to try to restore the gull colony at South Walney to favourable condition (Natural England, 2014). The principal driver behind the onsite declines is considered to be predator pressure which can be addressed through management.

6.2.3 Lesser black-backed gull

The breeding population of lesser black-backed gulls in the UK is estimated to be 110,000 pairs (Musgrove *et al*., 2013). This estimate relates to the race *graellsii*, which all breeding birds in the UK are considered to belong to (Wetlands International, 2015). Lesser black-backed gulls have declined

markedly in recent years (-48 % in the UK between 2000 and 2013; JNCC, 2014) and are categorised as “Least Concern” on the IUCN Red List (IUCN, 2024).

Lesser black-backed gull numbers in England have fluctuated in recent decades. Both breeding and wintering populations rose sharply in the latter half of the twentieth century, mostly due to increases at a small number of colonies and changes in migratory behaviour. However, as seen for the UK as a whole, there was a decline in breeding birds between 2000 and 2013, largely because of losses at the same key colonies (Ross-Smith *et al*., 2014).

The number of breeding lesser black-backed gulls in England is not currently monitored systematically in urban areas where it is apparently increasing. It is not clear from published sources how many urban colonies there are, whether they vary in their population trend and rate of population change, and what proportion of the English lesser black-backed gull breeding population they account for. Such uncertainties make it difficult to ascertain whether decreases in breeding numbers at particular sites translate into species-level population declines, or whether the overall breeding population is stable, or even increasing, but that birds are simply moving to sites where monitoring is not currently undertaken.

England is now an important region for wintering lesser black-backed gulls.

Lesser black-backed gulls were a qualifying feature of the original Morecambe Bay SPA, holding 10,000 pairs. This represented 12 % of the UK population at time of classification, though the proportion of the biogeographic population is not given. It was not a feature of the Duddon Estuary SPA, as comparatively small numbers of pairs breed at Hodbarrow. Data (2011-2015) showed the five year peak mean to have declined to 4,860 pairs (2.7 % of biogeographic population). Management action has been undertaken to try to restore the gull colony at South Walney to favourable condition (Natural England, 2014). The principal driver behind the onsite declines is considered to be predator pressure which can be addressed through management.

6.2.4 Mediterranean gull

The Mediterranean gull is listed in Annex I of the Birds Directive (JNCC, 1999), with an estimated UK non-breeding population of 1,800 individuals (Musgrove *et al.*, 2013). Mediterranean gulls have increased in number nationally throughout the 2000s and 2010s (Holt *et al*., 2015). They are distributed widely around British coasts (excepting northern Scotland) in the winter (Balmer *et al*., 2013).

WeBS data showed the SPA held a five year peak mean value of 18 individuals (2009/10 – 2013/14), representing 1.0 % of the UK population. Within the SPA, Mediterranean gulls are mainly found within Morecambe Bay, with only occasional individuals on the Duddon Estuary (Holt *et al*., 2015). Although the mean value of individuals is low, the species was recommended for inclusion because the current SPA suite does not contain any SPAs for non-breeding gulls despite several sites supporting qualifying numbers. The SPA supports a regularly occurring aggregation of non-breeding Mediterranean gulls at the north-westerly extent of its range and that meets the SPA selection guidelines, although other sites

in the UK support higher abundances. Mediterranean gulls are categorised as “Least Concern” on the IUCN Red List (IUCN, 2024).

6.3 Impact Mechanism

The assessment considers the potential impact to seabird features of the site from the disturbance and displacement of seabirds due to vessel presence, including disturbance from vessel movement, lighting and noise.

For breeding birds, disturbance may be at nesting sites within the SPA or may affect the foraging success of breeding seabird features of the SPA while at sea.

In winter, disturbance may affect the distribution of non-breeding seabirds within the SPA. For the duration of displacement, displaced birds may move to areas already occupied by other birds and thus face higher intra/inter-specific competition due to a higher density of individuals competing for the same resource. Alternatively, displaced birds may be forced to move into areas of lower quality (e.g. areas of lower food resources). A single, localised disturbance event does not have an immediate effect on the survival or productivity of an individual bird. However, repeated disturbance events could lead to displacement affecting the survival and productivity of a bird. The displacement could ultimately affect their demographic fitness (i.e. survival rates and breeding productivity) as well as potentially impacting on other birds in areas that displaced birds move to. Such impacts have the potential to lead to a change in the size or extent of distribution of the biogeographic population.

Vessels will operate mainly at the Calder, Dalton and Millom fields. These lie within the foraging ranges of sandwich tern, herring gull and lesser black-backed gull from the nearest coastal boundary of the Morecambe Bay and Duddon Estuary SPA. Vessels will also survey the full route of the Calder trunklines and will place rock cover at the cable crossing, located a short distance beyond the offshore boundary of the SPA. Depending on which ports are used to support the decommissioning activities, there is also the potential for vessels transiting through the SPA. As such, the vessels will also spend part of their time within the foraging ranges of common tern and little tern. They may also spend some time within the SPA during the non-breeding period, for which the site is designated for lesser black-backed gull and Mediterranean gull.

6.4 Appropriate Assessment for the Project Alone

6.4.1 Qualifying seabird species in the breeding season

The baseline shipping at proximity to this SPA is high, with between 25 and 400 vessels per 2km^2 per week. The upper end of the vessel density range is associated with established shipping channels from the ports of Barrow and Heysham. The Applicant has determined the number of active days for each vessel type required for the decommissioning works, with a sum total of 225 vessel days, spread over the scheduled decommissioning window. As such, the decommissioning activities of transiting vessels and a survey vessel will not constitute a significant change from baseline conditions.

Assessments by Wade *et al*. (2016) of disturbance to seabirds from offshore renewable developments conclude that none of common tern, little tern, sandwich tern, herring gull and lesser black-backed gull are vulnerable to disturbance, although also noting that in general there was greater uncertainty in the data regarding displacement caused by vessels and/or helicopters than in data regarding the percentage of flight overlapping with wind turbine blades and the level of displacement caused by structures.

As such disturbance by decommissioning vessels is not anticipated to affect the foraging of individual seabirds of the SPA. As such there would be no adverse effect on the extent, distribution, structure, function or supporting processes of the habitats of the breeding seabird features of the SPA. The presence of the decommissioning vessels would not affect the population of the breeding seabird features or their distribution within the site.

6.4.2 Qualifying seabird species in the non-breeding season

Of the 225 total vessel days planned by the Applicant for the whole works, 18 are assumed for vessels in transit. This includes transiting between in-field installations and infrastructure as well as transit to and from support bases at (as yet unselected) ports. If it is assumed that Barrow and/or Heysham ports are included in those to be used, a small proportion of these 18 days would be spent within the Morecambe Bay and Duddon Estuary SPA.

The Applicant has also planned for 8 days overall activity for survey vessels, with 0.5 days estimated to be within the SPA.

Morecambe Bay and Duddon Estuary SPA is also designated for non-breeding lesser black-backed gull and Mediterranean gull.

In a study by Camphuysen (2011) it was reported that given the scavenging nature of lesser black-backed gulls they are regularly found in the vicinity of active fishing vessels. This is a common response observed by several seabird species (Garthe & Hüppop, 2004; Votier *et al*., 2013; Bodey *et al*., 2014) and represents an important source of food for lesser black-backed gulls (Camphuysen, 1995; Garthe & Hüppop, 1998). Adding to this, Sommerfield *et al* (2016) found that lesser black-backed gulls appeared to travel large distances in order to feed on discards from fishing vessels, given the often-distant location of fishing grounds. Lesser black-backed gulls are also known to conduct this form of scavenging behind fishing vessels at night when there is sufficient light from the vessels (Camphuysen, 1995; Garthe & Hüppop, 1996).

Mediterranean gulls have also been observed to profit from discards produced by offshore fishing vessels (Arcos, 2001; Arcos & Oro, 2002). In the northwest Mediterranean they have been found to be the second most numerous species attending trawlers, emphasising their comfort interacting with vessels. Indeed, Cama *et al* (2011) found that when feeding offshore the primary foraging strategy of Mediterranean gulls was feeding off fishing vessel discards (78.6 % of feeding cases).

The proposed decommissioning will result in an insignificant increase to the baseline shipping in the Morecambe Bay and Duddon Estuary SPA. It is also evident that both lesser black-backed gulls and

Mediterranean gulls demonstrate confidence around vessels and thus are not anticipated to be disturbed or displaced by the vessels associated with the proposed decommissioning activities. Consequently there would be no adverse effect on the extent, distribution, structure, function or supporting processes of the habitats of the non-breeding seabird features of the SPA. The presence of the decommissioning vessels would not affect the population size or its distribution within the site during the non-breeding season.

6.5 Conclusion of AA for Morecambe Bay and Duddon Estuary SPA

Since disturbance from vessels engaged in the proposed decommissioning works will not impact achievement of the conservation objectives for the site for qualifying seabirds in either the breeding or non-breeding season, OPRED is satisfied that the project alone will not have an adverse effect on the integrity of the Morecambe Bay and Duddon Estuary SPA.

7 APPROPRIATE ASSESSMENT FOR MORECAMBE BAY SAC

7.1 Information on the SAC

Morecambe Bay is a large, very shallow, predominantly sandy bay at the confluence of four principal estuaries, the Leven, Kent, Lune and Wyre. The Morecambe Bay SAC includes the extent of both Morecambe Bay and the Duddon Estuary, to the north, and the Walney Channel which connects the two. The site covers an area of approximately 615 km^2 and produces the largest continuous area of intertidal mudflats and sandflats in the UK, with a very large tidal range of approximately 10 m on spring high tides. These tidal cycles and processes influence many of the habitats in Morecambe Bay SAC.

At low tide vast areas of intertidal sandflats are exposed, with small areas of mudflat, particularly in the upper reaches of the associated estuaries. The site also includes shallow subtidal sands, tide-washed channels (including the unique feature of Lune Deep) and rocky scars of glacially derived material. The sediments of the bay are mobile and support a range of community types, from those typical of open coasts (mobile, well-sorted fine sands), grading through sheltered sandy sediments to low-salinity sands and muds in the upper reaches. Apart from the areas of intertidal flats and subtidal sandbanks, Morecambe Bay supports exceptionally large beds of mussels *Mytilus edulis* on exposed "scars" of boulder and cobble, and small areas of reefs with fucoid algal communities (Natural England, 2014).

The qualifying features of the SAC which have been taken forward for further assessment are Sandbanks which are lightly covered by sea water all the time, Coastal lagoons and Reefs.

The Conservation Objectives for the protected features of the SAC are to ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring;

- The extent and distribution of qualifying natural habitats and habitats of qualifying species;
- The structure and function (including typical species) of qualifying natural habitats;
- The structure and function of the habitats of qualifying species;
- The supporting processes on which qualifying natural habitats and the habitats of qualifying species rely;
- The populations of qualifying species; and
- The distribution of qualifying species within the site.

The only qualifying species of the site is the great crested newt (*Triturus cristatus*), a terrestrial species with no connectivity to the Project. Consequently the fifth and sixth points for achieving favourable conservation status are not relevant to this assessment.

7.2 Feature Accounts

The following section presents feature accounts for all features of the Morecambe Bay SAC which have been scoped in for AA.

7.2.1 Sandbanks which are slightly covered by sea water all the time

Sandbanks which are slightly covered by sea water all the time consist of sandy sediments that are permanently covered by shallow sea water, typically at depths of less than 20 m (but sometimes including channels or other areas greater than 20 m deep). The habitat comprises distinct banks (i.e. elongated, rounded or irregular 'mound' shapes) which may arise from horizontal or sloping plains of sandy sediment. Where the areas of horizontal or sloping sandy habitat are closely associated with the banks, they are included within the Annex I type.

7.2.2 Coastal lagoons

Coastal lagoons are areas of shallow, coastal salt water, wholly or partially separated from the sea by sandbanks, shingle or, less frequently, rocks.

7.2.3 Reefs

Reefs are rocky marine habitats or biological concretions that rise from the seabed. They are generally subtidal but may extend as an unbroken transition into the intertidal zone, where they are exposed to the air at low tide. Intertidal areas are only included within this Annex I type where they are connected to subtidal reefs. Reefs are very variable in form and in the communities that they support. Two main types of reef can be recognised: those where animal and plant communities develop on rock or stable boulders and cobbles, and those where structure is created by the animals themselves (biogenic reefs).

7.2.4 Estuaries

Estuaries are habitat complexes which comprise an interdependent mosaic of subtidal and intertidal habitats, many of which are Annex I habitats in their own right, as is the case in the Morecambe Bay SAC. There is a gradient of salinity from freshwater in the rivers to increasingly marine conditions towards the open sea. The input of sediment from the rivers, the shelter of the estuary from wave action, and the often low current flows typically lead to the presence of extensive intertidal sediment flats and sediment-filled subtidal channels.

The significant tidal prisms of the four main estuaries result in Morecambe Bay being riven by large low-water channel systems. Although cobble 'skears' and shingle beaches occur at the mouths of each estuary of the Bay, the estuaries consist predominantly of fine sands and muddy sands. The estuaries support dense invertebrate communities, their composition reflecting the salinity and sediment regimes within each estuary.

In addition to the sedentary subtidal and intertidal communities, the water column of estuaries is an important conduit for free-living species, such as fish, and juvenile stages of benthic plants and animals.

In particular, it is the means by which migratory fish species make the transition between the marine and freshwater environments.

7.2.5 Mudflats and sandflats not covered by seawater at low tide

Intertidal mudflats and sandflats are submerged at high tide and exposed at low tide. At low water in Morecambe Bay and Duddon Estuary, large areas of sandflats are exposed, forming the largest single area of continuous intertidal mudflats and sandflats in the UK. The habitats range from the mobile fine sands of the outer Bay to more sheltered sands in the inner areas. With increasing shelter in the Bay's adjoining estuaries, finer sediments settle out and form extensive mudflats, supporting a particularly rich and diverse range of infaunal species.

7.2.6 Large shallow inlets and bays

Large shallow inlets and bays are large indentations of the coast, generally more sheltered from wave action than the open coast. They are relatively shallow (with water less than 30 m over most of the area) and, in contrast to the Estuaries habitat, generally have much lower freshwater influence. The Morecambe Bay SAC is of the Embayment sub-type. Of particular note is the rich community of sponges and other associated fauna on tide-swept pebbles and cobbles at the southern end of Walney Channel.

7.3 Impact Mechanisms

The assessment considers the potential for the identified features to be affected by changes to baseline sediment dynamics caused by the suspension and re-settling of sediments caused by seabed disturbance.

Short lengths of the piggy-backed Calder trunklines (PL1965 and PL1966) pass through the Morecambe Bay SAC between Walney Island and the Rivers Gas Terminal. No other part of the assets to be decommissioned are within the SAC. The trunklines will be decommissioned in situ and no works will be undertaken in connection with the trunklines within the SAC.

The decommissioning activities that have the potential to indirectly impact the seabed in the SAC, are limited to those that may arise from the re-suspension and re-settling of sediment following activity affecting the seabed, at the cable crossing of the trunklines, approximately 4 km beyond the seaward boundary of the SAC.

7.4 Appropriate Assessment for the Project Alone

Rock mass (550 te) will be placed over the cable crossing using a Remotely Operated Vehicle (ROV). This will control the profile of the rock covering and accurate placement of rock over the pipeline and on the seabed to ensure rock is only placed within the planned footprint with minimal spread over adjacent sediment, minimising seabed disturbance.

Annex 1 features of transitional waters are formed by and change with the dynamic natural accretion and depletion processes resulting from tides, river flows and wind. Each habitat has a degree of sensitivity to smothering and changes to siltation rate (Atterbury *et al.,* 2021). Biological communities

associated with these habitats are in a continual state of flux and can either adjust to disturbed conditions, or rapidly re-colonise areas that have been disturbed.

Sediment suspended during rock placement is expected to resettle close by. Whereas a proportion of it may disperse on the tidal streams this will represent an insignificant movement of sediment compared to natural processes, particularly during storms.

The highly localised spatial magnitude of this impact, occurring 4 km beyond the boundary of the SAC, is not considered to have the potential to adversely impact the extent, distribution, structure or function of reefs, coastal lagoons, sand banks which are slightly covered by sea water all the time, estuaries, mudflats and sandflats not covered by seawater at low tide, or large shallow inlets and bays. Neither will the activities disturb the supporting processes of coastal geomorphology on which the qualifying habitats rely.

Notwithstanding the negligible impact to the SAC, the adoption of the mitigation measures listed in Section 8 is regarded as good environmental practice and will serve to minimise all potential impacts from the activities.

7.5 Appropriate Assessment for the Project Alone

Since the suspension of sediment into the water column by the proposed decommissioning works will not impact achievement of the conservation objectives for the features of the site, OPRED is satisfied that the project alone will not have an adverse effect on the integrity of the Morecambe Bay SAC.

8 MITIGATION

To minimise the environmental impact of the Project throughout the decommissioning activities, various mitigation measures have been proposed and the Applicant has committed to putting these in place.

This section summarises the mitigation measures that the Applicant has committed to, which were considered in Stage 2 of the HRA process (AA).

All mitigation techniques will be adopted in line with legislative requirements or adopted standard industry practice where relevant.

To minimise impacts on populations of red-throated diver and common scoter, the Applicant will commit to Natural England best practice measures if vessels are transiting through the Liverpool Bay SPA boundaries, including:

- Selecting routes (when transiting to site) that avoid aggregations of red-throated diver and common scoter, where practicable;
- Restricting (to the extent possible) vessel movements when transiting to the site to existing navigation routes (where the densities of red-throated diver and common scoter are typically relatively low);
- Avoidance of over-revving of engines (to minimise noise disturbance); and
- Briefing of vessel crew on the purpose and implications of these vessel management practices (through, for example, tool-box talks).

Additionally, the Applicant has implemented an internal team to lead the bird management processes with regards to the decommissioning operations. The remit of this team's work is to minimise disturbance impacts to nesting seabird through the following actions:

- Plan and arrange seasonal surveys until removal;
- Explore technological opportunities for evidence gathering; and
- Develop bird management plans.

The Applicant will liaise with OPRED and JNCC to confirm expectations and licensing requirements based on the nest status and scheduling, as appropriate.

To minimise seabed disturbance impacts, the following mitigation measures have been committed to:

- No cutting or rock placement will occur within the boundaries of the Morecambe Bay SAC, Liverpool Bay SPA, and Morecambe Bay and Duddon Estuary SPA. Activities will be limited to non-intrusive surveys;
- Cutting and lifting operations will be controlled by ROV to ensure accurate placement of cutting and lifting equipment and minimise any impact on seabed sediment;

- Lifting operations will be conducted around high tide and slack water to minimise the distribution of mobilised sediments;
- The requirements for further excavation will be assessed on a case-by-case basis and will be minimised to provide access only where necessary. Internal cutting will be used preferentially where access is available;
- Vessels are most likely to be equipped with dynamic positioning rather than relying on anchors to remain in position which interact with the seabed;
- The rock placement will be carefully placed over the required areas of the pipelines and seabed in order to ensure rock is only placed within the planned footprint with minimal spread over adjacent sediment, minimising seabed disturbance;
- Data collected in the area will be reviewed for potential sensitive seabed habitats prior to the commencement of operations; and
- Post decommissioning debris clearance, surveys and monitoring will be undertaken for the area. The method of verification of which will be agreed with the regulator and relevant stakeholders in due course.

9 IN-COMBINATION EFFECTS

In-combination impacts may arise from gradual changes caused by other projects or plans within the baseline environment. Under the Habitats Regulations there is a requirement for the Competent Authority to consider the in-combination effects of plans or projects on European Sites when undertaking an HRA. In-combination effects refer to effects, which may or may not interact with each other, but which could affect the same receptor or interest feature.

9.1 Identification of in-combination projects

The in-combination assessment has considered all other relevant plans, projects and activities where detail to inform the assessment is publicly available at the time of writing. This includes:

- Other oil and gas infrastructure/development (cables and pipelines);
- Offshore wind farms and associated cabling and infrastructure;
- Other forms of cabling (i.e. telecommunications and interlinks); and
- Other coastal energy and/or miscellaneous coastal development activity.

The in-combination assessment includes plans or projects that are:

- Under construction;
- Permitted application(s), but not yet implemented;
- Submitted application(s), not yet determined;
- Projects identified in the relevant Development Plan (and emerging Development Plans); and
- Sites identified in other policy documents, as development reasonably likely to come forward.

Operational and existing projects and activities are not included within the in-combination assessment, as these activities are considered part of the baseline and therefore cannot constitute an in-combination impact. The exception is if there are decommissioning activities, for example, planned which would have a temporal overlap with the EIS decommissioning activities (to occur in phased schedules between 2029 and 2033).

The Applicant has identified that two projects within 40 km of the infrastructure could have a temporal overlap with the Project and therefore may interact to cause in-combination effects on European sites assessed within this HRA. These are:

- Liverpool Bay Assets decommissioning; and
- Hynet Carbon Dioxide Transportation and Storage construction works.

In addition, OPRED have identified a further four potential in-combination projects:

- Awel y Mor Offshore Windfarm;
- Mostyn Energy Park;

- Mona Offshore Windfarm; and
- Morgan and Morecambe Offshore Windfarms and Transmission Assets.

For all of the identified projects, the in-combination impacts will potentially affect only the Liverpool Bay SPA due to the location and timings of their decommissioning and construction works. None of the identified in-combination projects effects the Morecambe Bay and Duddon Estuary SPA, or the Morecambe Bay SAC and so there will be no in-combination effect for these protected areas.

9.2 In-combination assessment of the Liverpool Bay SPA

9.2.1 Liverpool Bay Assets Decommissioning

The Liverpool Bay Assets are being partially decommissioned through a programme to enable the Hynet Carbon Dioxide Transportation and Storage project in Liverpool Bay. This includes re-use, partial removal and full removal of different asset that were previously used for oil and gas production (ENI UK, 2024; Liverpool Bay Carbon Capture Storage (CCS) Ltd, 2024).

The works will include:

- Removal of platform topsides at Lennox, Hamilton and Hamilton Main;
- Plugging of abandonment wells at Lennox, Hamilton and Hamilton Main; and
- Removal of subsea elements that cannot be left in situ via using a ‘cut and lift’ technique.

Vessels required for the decommissioning are expected to include one dive support vessel and one platform supply vessel.

9.2.2 Hynet Carbon Dioxide Transportation and Storage construction works

Construction of the Hynet Carbon Dioxide Transportation and Storage project will include installation of new ‘Douglas’ CCS platform, installation of new topsides onto the existing jackets of the Lennox, Hamilton and Hamilton Main platforms, installation of pipeline tie-in spools and installation of a new cable from shore to supply each facility.

9.2.3 Awel y Mor Offshore Windfarm

Time Period: Years 2025 – 2030 (construction)

This is a proposed renewable energy project, 10.50 km off the coast of North Wales, of up to 1.1 GW. There is a proposal for a maximum of 50 turbines, associated transmission assets, and cabling (including and interlink cable with Gwynt y Môr offshore wind farm). The windfarm is not within the SAC, but the transmission and access routes do cross the SPA.

Magnitude of impact: Unknown number of vessels will transit through the SPA, mitigation through the form of a vessel management plan will be employed.

9.2.4 Mostyn Energy park

Time Period: Years 2023 -2025 (construction)

This is an extension of the Mostyn Energy Park at the Port of Mostyn. The project requires construction of a 360 m quay, reclamation of 3.5 ha, capital dredging of new berth pockets and re-dredging of the approach channel. Dredged material will be used as fill material for reclamation, with the disposal of excess dredged material at Mostyn Deep. There will also be maintenance dredging of new and existing berths, the approach channel and harbour area. The energy park is not in the Liverpool Bay SPA, but the approach channel and Mostyn deep spoil ground are within the SPA and vessel movements associated with the dredging and construction works will occur in the SPA. These vessel movements will however be within regularly used shipping channels and spoil ground access routes.

Magnitude of impact: Vessels and dredgers associated with the construction works may operate within the SPA however they will use regularly used shipping routes and disturbance is unlikely to be significantly above background levels.

9.2.5 Mona Offshore Windfarm

Time Period: Years 2026 -2028 (construction)

This is a proposed offshore windfarm of up to 96 turbines, 28.20 km off the coast of North Wales, of up to 350 MW. The array area is outside of the Liverpool Bay SPA, but the proposed cable route will need to cross the SPA to make landfall. The installation of the cable and vessel movements associated with the array construction have the potential to affect the SPA. The examination of the Mona windfarm finished in January and a decision has yet to be made

Magnitude of impact: Up to 1,929 installation vessel movements (return trips) during construction and up to 126 installation vessel movements during cable laying. These are intended for a construction period out-with the wintering seasons and will be managed by a vessel management plan. Cable installation will not take place in wintering season as controlled by the environmental management plan. Vessel related disturbance on wintering red-throated diver and common scoter during construction are not considered likely.

9.2.6 Morgan and Morecambe Offshore Windfarms and Transmission Assets

Time Period: Years 2026 -2028 (construction)

The Morgan offshore windfarm is a proposed development of up to 96 turbines, 36 km from the Northwest coast of England. The application for development has been accepted by the planning inspectorate but examination has yet to commence. The Morecambe offshore windfarm is a development of up to 35 turbines 30 km off the coast of northwest England. The examination of the application by the planning inspectorate is underway. Both windfarm arrays are outside the Liverpool Bay SPA.

Due to the close proximity of the two arrays, the transmission assets i.e. the export cables to shore for the Morgan and Morecambe offshore wind farms are being progressed as a joint development and a separate application for the transmission assets has been submitted to the planning inspectorate, examination of the application has yet to commence.

The cable routes for the two wind farms will cross the Liverpool Bay SPA meaning the installation of cable and vessels associated with the array construction have the potential to affect the SPA.

Magnitude of impact: There could be vessel traffic associated with the construction phase, however the number of vessels involved, and the timing of these works is not clear. They will however be managed by an environmental management plan to minimise disturbance to birds.

9.2.7 Conclusion of in-combination assessment for Liverpool Bay SPA

Based on the available information, the Liverpool Bay Asset decommissioning and Hynet Project construction schedules may overlap with the Project's decommissioning activities. Considering the vessel requirements for Liverpool Bay, Hynet Project, and the decommissioning of Calder, Dalton, and Millom Fields, the cumulative vessel activity is not expected to significantly deviate from the high baseline shipping levels near Liverpool Port.

In-combination impacts from vessel disturbance are expected to remain highly localised, and temporary during project activities. No significant, long-term in-combination impacts on the ornithological populations of the Liverpool Bay SPA are predicted. Any in-combination impacts will be short-term, reversible, and highly localised. These conclusions are also apparent on review of the Hynet Environmental Statement (Liverpool Bay CCS Ltd, 2024) which concludes that the displacement scores for red throated divers, common scoter, common tern, little tern and little gull from vessel disturbance are below the critical 1 % threshold of excess mortality with effects predicted to be very temporary in nature only lasting one season. Furthermore, the Project's own commitment to implementing best practice measures for red-throated divers, as detailed in Section 8, which also apply to mitigating impacts on common scoter, will further reduce any potential in-combination impacts on SPA features from these projects.

The magnitude of disturbance from the additional four projects (Awel y Mor Offshore Windfarm, Mostyn Energy Park, Mona Offshore Windfarm, and Morgan and Morecambe Offshore Windfarms and Transmission Assets) is not expected to be significantly higher than existing baseline conditions and all bar the port of Mostyn expansion will be controlled by bespoke bird/vessel management plans which will limit their disturbance.

It is impossible to state with any degree of certainty that the short-term disturbance from the projects are likely to cause any level of mortality. The brief temporary displacement from proposed operations will displace seabirds. However, these are likely to return to the disturbed area shortly after operations have concluded. Therefore, no significant mortality is expected due to the proposed temporary

disturbance. Thus, despite the presence of previously installed infrastructure which may be causing a long-term degradation in site condition, the DP will not result in any new impact which could cause a further significant or persistent change in site condition or integrity.

Given the above, it is considered that there will not be an adverse effect on the integrity of Liverpool Bay SPA for its non-breeding ornithological features.

10 CONCLUSION

The Secretary of State has carefully considered all of the information available in order to undertake a HRA on the proposed Calder, Dalton and Millom decommissioning project.

The Secretary of State was not able to conclude an absence of likely significant effect to the qualifying breeding and non-breeding seabird features of the Liverpool Bay SPA, the breeding and non-breeding seabird features of the Morecambe Bay and Duddon Estuary SPA, nor certain Annex 1 seabed habitat features of the Morecambe Bay SAC.

The Secretary of State has consequently undertaken an AA in respect of each relevant site's conservation objectives to determine whether the Project, either alone or in-combination with other plans or projects, will result in an adverse effect on integrity of each site in respect to those features.

For the Liverpool Bay SPA, the Secretary of State concludes that:

- Impacts from the decommissioning activities of the Project alone are insufficient to have an adverse impact on the integrity of the common scoter, red-throated diver and little gull features; and
- Impacts from the decommissioning activities of the Project in combination with other projects for which sufficient data is available will not have an adverse impact on the integrity of the common scoter, red-throated diver and little gull features.

For Morecambe Bay and Duddon Estuary SPA, the Secretary of State concludes that:

- Impacts from the decommissioning activities of the Project alone are insufficient to have an adverse impact on the integrity of the common tern, herring gull, lesser black-backed gull, little tern, mediterranean gull, or sandwich tern features; and
- This site will not be impacted by any other known plans or projects and therefore in-combination effects were not assessed.

For Morecambe Bay SAC, the Secretary of State concludes that:

- Impacts from the decommissioning activities of the Project alone are not considered to have the potential to adversely impact the conservation objectives of this site; and
- This site will not be impacted by any other known plans or projects and therefore in-combination effects were not assessed.

As the proposed decommissioning activities are scheduled to be undertaken within a long time window, the Secretary of State considers there to be insufficient certainty as to what other developments will be taking place during the later stages of decommissioning activities, and of the extent of impacts those other developments could have.

When applications are presented for other projects the Secretary of State will review the potential for those projects to impact features of the Liverpool Bay SPA in combination with the Project and update his assessment at such time.

The Secretary of State concludes that proposed decommissioning of the Calder, Dalton and Millom assets will not have an adverse effect on the integrity of any European site.

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